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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,846	08/01/2003	Alexander Stankowski	033275-406	1044

21839 7590 10/04/2005

BUCHANAN INGERSOLL PC
(INCLUDING BURNS, DOANE, SWECKER & MATHIS)
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
JOLLEY, KIRSTEN	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/631,846	STANKOWSKI ET AL.	
	Examiner	Art Unit	
	Kirsten C. Jolley	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,9-19 and 21-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,9-19 and 21-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-2, 4-6, 9-19, and 21-33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-34 of copending Application No. 10/995,489. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application is broader than, and thus inclusive of, the claims of U.S. application number 10/995,489.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-2, 4-6, 9-19, and 21-33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18, 21-26, and 29-30 of copending Application No. 10/950,640. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application is broader than, and thus inclusive of, the claims of U.S. application number 10/950,640.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

4. Applicant's arguments filed June 13, 2005 have been fully considered but they are not persuasive.

Applicant argues that "The Official Action dated March 11, 2005 does not contain a rejection of any one of claims 7-10... Therefore, by the incorporation of the features of claims 7 and 8 into dependent claim 1, claim 1 and all of its dependent claims ... also are not rejected in the Official Action." The Examiner notes that the absence of claim numbers 7-10 in the paragraph heading under 35 USC 103 was clearly a typographical error since the cover sheet of both first and final Office actions indicate that all claims are rejected, and because claims 7-10 are specifically addressed in the 35 USC 103 rejection on page 5 of the first Office action. The 35 USC 103 rejections of the first Office action were stated as being maintained in the final Office action of March 11, 2005. Therefore, Applicant's arguments are unconvincing. The amended claims are rejected as set forth below.

Claim Objections

5. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 19 does not further limit claim 1 from which it depends..

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-2, 4-6, 9-19, and 21-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernihough et al. (US 6,265,022) in view of EP 0 854 005 A2.

Fernihough et al. discloses a method of protecting the cooling holes of a gas turbine component from the effects of thermochemical or mechanical processes carried out on the surface of the component, comprising the steps of: applying a masking material (plug material) to the cooling holes, the plug material containing at least one filler material (col. 5, lines 48-63); at least partially thickening the masking material by heating so as to volatilize the organic portion of the plug material; carrying out the removal process by chemical etching after the plugs are in place (col. 6, lines 45-50); and removing the masking material/plugs from the cooling holes of the component. It is known that the plug material is applied and thickened from the outside of the component surface because Fernihough et al. teaches that an insert may be placed on the internal surface (col. 6, lines 31-36).

Fernihough et al. lacks a teaching of adding a material which fluoresces under UV light to its masking material and inspecting the substrate using UV light to locate, and subsequently remove, any unwanted residual masking material. It is well known in the coating art to provide colored masks in order to easily locate the masking material and differentiate it from the surface

being coated or protected. It would have been obvious to one skilled in the art to have added coloring agents to the plug material of Fernihough et al. in order to make location and removal of the plug material easier. Further, EP '005 is cited for its teaching of a plug/filling material used to fill the hollow interior of a turbine component. EP '005 makes use of fluorescent material to aid inspection of cooling holes. EP '005 teaches that the fluorescent material is an off the shelf commercial material which is commonly used to detect cracks in cooling holes, and is therefore readily available in many shops for making and repairing turbine blades. It would have been obvious to have incorporated the fluorescent material in the masking material of Fernihough et al. in order to aid removal and inspection of the masking material, and because such fluorescent material is readily available in turbine manufacturing and repair shops as taught by EP '005.

Fernihough et al. is silent with regard to the filler size. One having ordinary skill in the art would have known that the size of filler particles is dependent upon the size of the cooling hole being plugged, on the amount of porosity desired, on the number of different particles being used as fillers, etc. It would have been obvious for an engineer skilled in the art to have selected the optimum sizes of filler particles for use in the plug material considering each of the above factors, through routine experimentation in the absence of a showing of criticality.

As to claims 6 and 22, Fernihough et al. teaches removing the plug material by burning it out, and then removing residual by selective chemical cleaning (col. 6, lines 27-30). Fernihough et al. lacks a teaching of using mechanical removal to remove residual plug material. It is well known in the art that mechanical removal (including water jet machining and ultrasonic cleaning) and chemical removal are alternative and equivalent means for removing a material from a substrate surface in the turbine engine art. It would have been obvious for one having

ordinary skill in the art to have substituted mechanical removal for chemical removal with the expectation of equivalent results in the absence of a showing of unexpected results.

As to claim 10, it would have been obvious to have re-applied masking material to the local area if too much masking material was removed during removal of the unwanted masking material.

As to claims 13-15, Fernihough et al. does not disclose applying the plug material in a step-wise fashion. It is well settled that the mere duplication of parts, or the splitting of one step into two, has no patentable significance unless a new and unexpected result is produced. Further, it would have been obvious for one having ordinary skill in the art to have determined the optimum amount of filler in each layer of plug material through routine experimentation in the absence of a showing of criticality.

As to claims 16 and 24-27, Fernihough et al. teaches that the fillers in the plug material may include the materials claimed (col. 5, lines 48-63). Further, as to claim 28, the use of photo-polymerizing resins would require the use of electromagnetic radiation such as those claimed for curing/thickening.

As to claims 17-18, Fernihough et al. is silent with regard to the amount of fillers. One having ordinary skill in the art would have known that the amount of filler particles is dependent upon the size of the cooling hole being plugged, on the amount of porosity desired, on the number of different particles being used as fillers, etc. It would have been obvious for an engineer skilled in the art to have selected the optimum amount of filler particles for use in the plug material considering each of the above factors, through routine experimentation in the absence of a showing of criticality.

As to claim 23, Fernihough et al. does not teach locating the cooling holes using a vision system which directs a CNC machine. However, it is noted that one skilled in the art would have known to use available equipment for locating cooling holes during the removal of residual material in order to facilitate the process of Fernihough et al.

As to claim 29, Fernihough et al. teaches photo-polymerizing resins may be used. It would have been obvious for one having ordinary skill in the art to have used ultraviolet curing/thicknening means when using photo-polymerizing resins because ultraviolet light is the mechanism for curing such resins.

Claim 30 is anticipated because it further defines a means for thickening that was not selected; electromagnetic energy source was the means selected in rejecting claim 28. As to new claims 32-33, Fernihough et al. teaches that the filler and plastic in the plug material may include the materials claimed (col. 5, lines 48-63).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Foster et al. (US 4,726,104) and Venkatarámani et al. (US 5,902,647) are cited to illustrate methods for masking/plugging cooling holes in turbine engines to prevent material from various mechanical processes from entering and contaminating the cooling holes.

Updegrove et al. (US 6, 107,598) and Foster et al. are cited for their teachings of using mechanical processes to remove their masking materials from the substrate surface.

Hoelger (US 2004/0191460) and Horiki et al. (US 5,540,880) are cited for their teachings of using mask materials which are colored.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Tuesday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kirsten C Jolley
Primary Examiner
Art Unit 1762

kcj